SOME NOTES OF RARE FERNS.—On the trip to Ocala last December we noticed quantities of the beautiful *Aster Carolinianus*, full of large bright blossoms, growing all along the Ochlawaha river. About Ocala the flowers were scarce just then, but I gathered a large number of fine *Asplenium firmum*, two forms of *A. myriophyllum* and two forms of *Pteris Cretica*. When I saw the number of flourishing plants I had no fear of destroying localities, and was able to secure entire ferns for my specimens.

I was also successful in getting a goodly quantity of fruited *Polypodium Plumula* from a monster Live Oak in a deep forest near St. Augustine. This is the first time that I have collected this fern in really good condition. Though one of our prettiest ferns it gives more trouble in pressing than any other one, I think. This is caused by the extreme elasticity of the rhachis, which is so great that the frond *will not* stay as it is placed, and by the rolling up of the pinnæ. Unless placed in an extremely wet atmosphere they will not uncoil, and then they are all ready to curl right up again unless pressed at once. I have collected also excellent specimens of *Acrostichum aureum*. Some of these are simply upper sections of fruited fronds, and some show the entire fertile frond. The latter are five or six feet long and are very handsome ferns.—MARY C. REYNOLDS.

RHUS TOXICODENDRON.—I notice in the GAZETTE for October, 1879, an account of an unusually large specimen of *Rhus Toxicodendron*. As every botanist knows, this species is usually prostrate or creeping over walls and fences and at the north rarely high climbing, the stems seldom more than a half inch in diameter. It was with astonishment, therefore, that I noted during the winter of 1879 the enormous specimens among the timber along the Grand river in the Cherokee Nation. Many of them were not less than six inches in *diameter* and climbing to the tops of the tallest trees, thus rivaling *Tecoma radicans* and *Vitis*.

Here in Missouri the largest trees along the streams have been felled and most of the old specimens of the *Rhus* which clung to them been destroyed; still, very large specimens are frequent. I note that while *R. typhina* is the most abundant species in northern New England, *R. copallina* is largely in excess of the others here in the southwest.—WILLIAM F. FLINT, *Bowers Mills, Missouri.*

COMMELYNACEÆ.—At a meeting of the Linnean Society on Feb. 5, Mr. C. B. Clarke gave an oral *re'sumé* of this order, which he had lately worked out for DeCandolle's "Prodromus." He defined the order by the position of the embryo, as not surrounded by albumen, but closely applied to the embryostega, which is always remote from the hilum. An important auxiliary character is that the three segments of the calyx are always imbricated, so that one is entirely outside of the two others. Mr. Clarke divides the *Commelynaceæ* into

three tribes, as follows: 1. *Pollieæ*, fruit indehiscent; 2. *Commelyneæ*, capsule loculicidal, fertile stamens 3–2; 3. *Tradescantieæ*, capsule loculicidal, fertile stamens 6–5. He also alluded to the manifest and important change of color in the petals of several of the *Commelynaceæ*—e. g., *Aneilema versicolor*, where from a bright yellow when fresh, they become a deep blue when dry.—*Nature.*

AUTOMATIC MOVEMENT OF THE FROND OF ASPLENIUM TRICHOMANES.—In a letter to Dr. Gray in reference to the above article in the March GAZETTE, Mr. E. J. Loomis says: The motion instead of being "in the plane of the frond," is really at right angles to it.

Four other fronds starting from two different roots exhibit motion, but in less degree than the one first noticed. These are not new fronds, but are old ones which were fully developed as to size when taken up, but have fruited since transplanting. It seems to me that the motion is confined, not only to the fruitful fronds, but to the period of fructification, since these four fronds have been subjected to the same condition as the first, but have exhibited motion only since fruiting began.

The stimulus of artificial light is sufficient to excite motion in the fronds for a few minutes, but after the lapse of five or six minutes the motion ceases and is not resumed.

I have noticed that the end of the frond does not describe a straight line but it moves in a long and very narrow ellipse, with the hands of a watch. The motion is more vigorous and through a larger arc in the middle of the day.

SOME FLORIDA FERNS FOR SALE.—Miss Mary Reynolds, of St. Augustine, Florida, has pressed beautiful specimens of some rare Florida ferns. She has a large number of duplicates for sale, and the low prices will enable every botanist interested in ferns to procure specimens. The species are *Asplenium firmum*, *A. myriophyllum*, *Pteris Cretica*, *Polypodium Plumula*, and *Acrostichum aureum*. The first four can be procured for fifteen cents each. Upper sections of the fertile frond of the *Acrostichum* cost from 20 to 60 cents; same with entire small sterile frond, 60 to 90 cents; entire fruited frond, one dollar.

NOTES FROM PAINESVILLE, OHIO.—Dr. H. C. Beardslee has sent specimens of *Scirpus atrovirens*, with the viviparous growth in two stages, one in which there are roots some inches in length. The specimens were on culms which had been broken over and were found lying in the water of a small brook.

Viviparous forms of *Cenchrus tribuloides* were also collected, a thing that might be expected in a plant of its habits.

Dr. Beardslee has also been watching the vegetation of the seeds of *Draba verna*, and the growth of the rosettes of radical leaves which it puts forth. This winter he watched it come into flower, which it did

as early as February 20. He thinks it clearly biennial and would be glad to know from other observers whether it is always so.

Sisymbrium Thaliana, a little later flowering than the *Draba*, is also biennial. In the first week of March it was just beginning to show flowers.

ERYTHRÆA CENTAURIUM.—In the summer of 1878 I discovered three or four fine plants of *Erythræa Centaurium*, Pers., nicely in blossom, on the grounds of the Agr'l Coll., Lansing, Mich. Some time before this Prof. Beal found specimens of the same in an open swamp near by. None have been found in the locality since '78.

Hydrocotyle umbellata, L., also occurs near here on the shores of small lakes.—L. H. BAILEY, JR.

SOME PLANTS OF FRANKLIN CO., KY.—For more than a year past I have been indebted to your GAZETTE for many little things of great interest to me, and I feel that I ought to make some return (or strive to do so) by giving you some of my notes on last year's collecting in this county (Franklin), premising, however, that I am a beginner in botany.

Hepatica triloba and *acutiloba* are both found on the Lower Silurian limestone hills or cliffs of Kentucky River, the latter species more common and often seen with the lateral lobes of the leaves again slightly lobed.

Isopyrum biternatum, T. & G., occurs in similar situations, but is more rare.

Hydrastis Canadensis, L., is common in rich woods and often has an additional leaf, three lobed, just below the flower, making three leaves on the stem.

Menispermum Canadense, L., is common, but it is rare to find a specimen with a woody stem nearly an inch in diameter.

Podophyllum peltatum, L., I found once with but one leaf on the flowering stem. I thought it rather interesting to find on one cliff at some distance from any dwelling three introduced plants, viz.: *Papaver somniferum*, L., *Bupleurum rotundifolium*, L., and *Vinca minor*. The latter covers a large portion of the wooded hill side, while the former grew scattered among the loose stones near the base. How the *Bupleurum* got there I cannot imagine, as I have never seen it anywhere else in the county.

Cardamine rhomboidea, var *purpurea*, Torr., is common in rich soil at the base of the limestone cliffs.

Arabis patens, Sulliv. is found in the same situations, but is not common.

Vesicaria Shortii, T. & G., is quite abundant in a few localities in similar situations to the above.

Lepidium intermedium, Gray, is rare in dry woods.

Solea concolor, Ging, occurs abundantly in the rich soil on the river